

QUEST

ADVENTURES IN THE WORLD OF SCIENCE

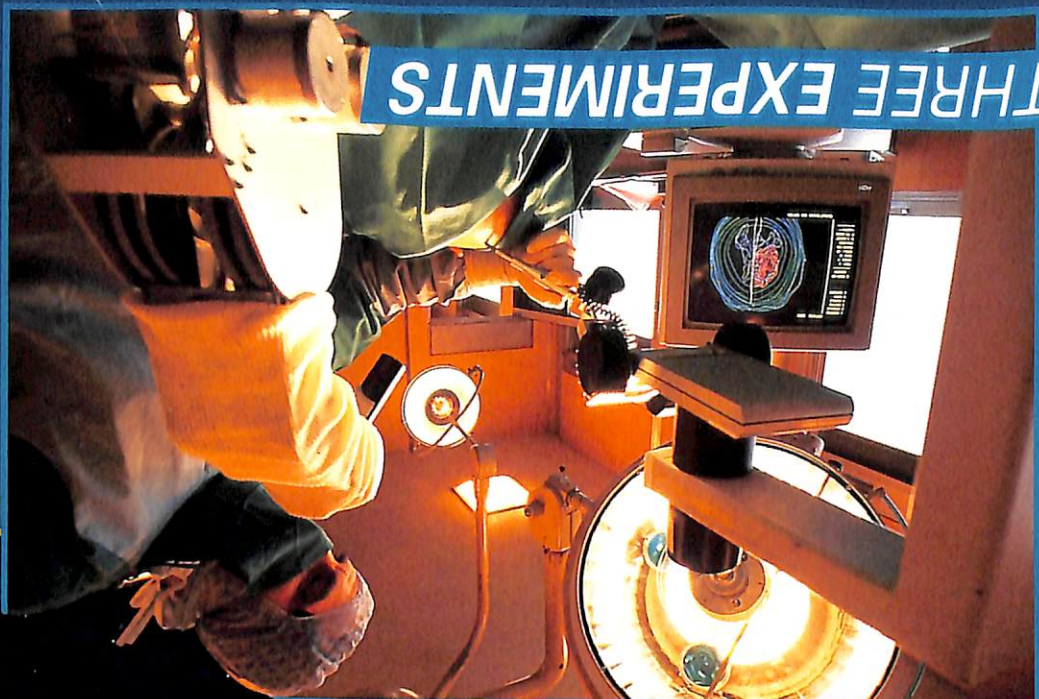
SURVIVAL

51



MORE Q & A CARDS

GIGANT GRAND PRIX POSTER



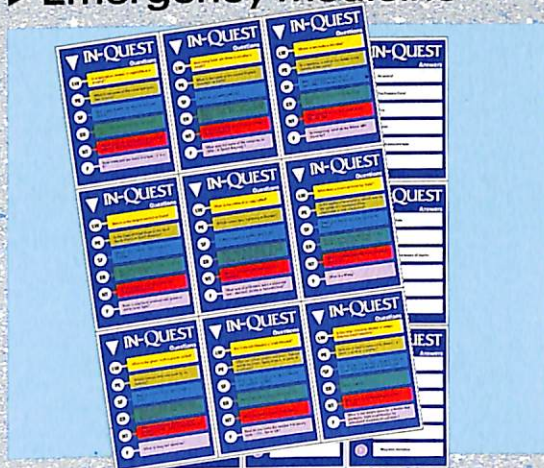
THREE EXPERIMENTS

- FACT FILES ON:
- ▶ Emergency
 - ▶ Adapt or die
 - ▶ The cruel sea
 - ▶ Polar perils
 - ▶ Space hazards
 - ▶ Trash power
 - ▶ Ecosystems

INSIDE THIS PACK

FACT FILES

- Renewable energy ► At the ends of the Earth...
- Health in Space ► How ecosystems work
- Beating extinction ► The art of survival at sea
- Emergency medicine



More In-Quest Q & A cards



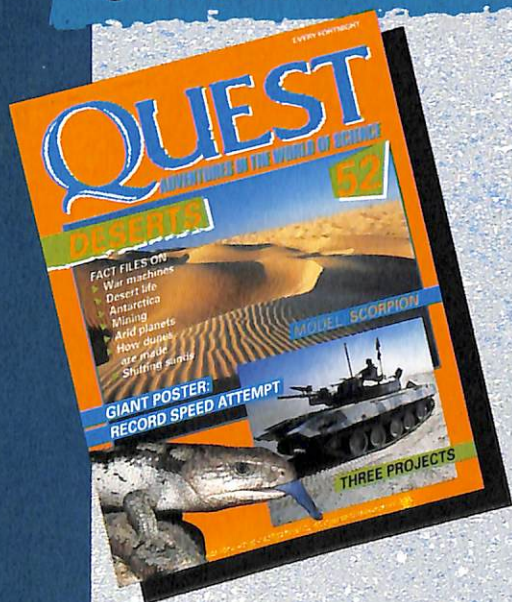
POSTER

Cheating death

PROJECT SHEETS



COMING IN QUEST 52 DESERTS



MODEL
Scorpion

FACT FILES INCLUDE:

- Desert warfare
- The advancing desert
- Life in the desert
- Deserts on other planets
- Antarctica: desert of ice
- Mining the desert
- The desert environment



POSTER

Desert record breakers

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PROJECTS

SURVIVAL

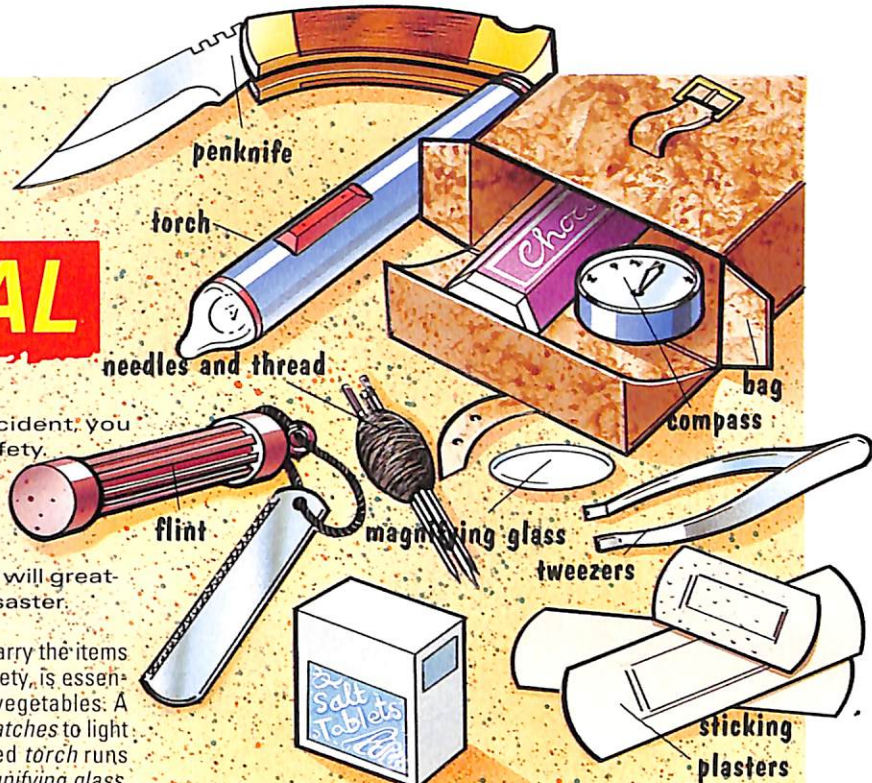
Lost on a hillside or marooned after an accident, you will need all the help you can get to reach safety.

SURVIVAL KIT



A few essential items, stored in a small bag, will greatly increase your chances of surviving any disaster.

Carry a small, waterproof bag, just large enough to carry the items listed below. A *pen-knife*, with a folding blade for safety, is essential for many tasks, from sawing wood to preparing vegetables. A *compass* will help you find your way. You will need *matches* to light a fire and for lighting a *candle*, if your pencil-shaped *torch* runs out. Also carry a *flint and striker*, together with a *magnifying glass*, which will start a fire from direct sunlight. Some strong *thread* for repairs to clothing or bags, wound round several *needles*, and some *string*, may be useful. Add *sticking plasters*, a *bandage*,



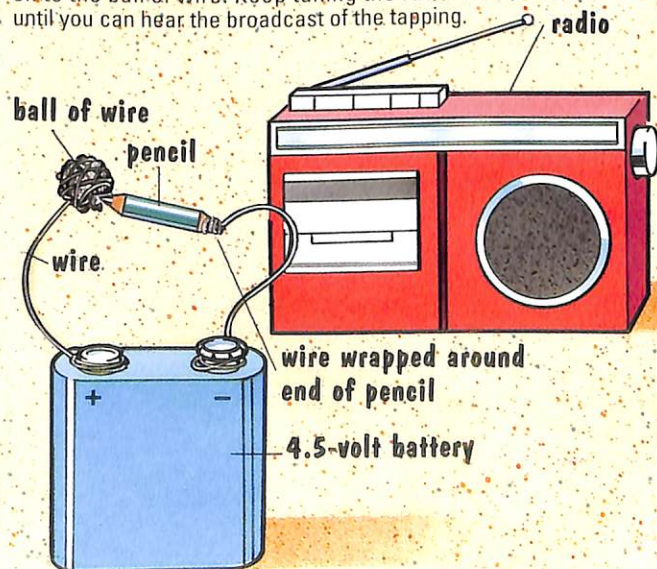
tweezers and *antiseptic lotion*, in case of injury. Include *water-sterilizing tablets*, *salt tablets* and *chocolate*. Pack the more fragile items inside an aluminium *mess tin* that can be used to cook food in, over a fire. If there is room, include a *water bottle*.

ADVENTURES IN THE WORLD OF SCIENCE

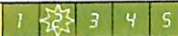
MAKING RADIO WAVES



You need a battery, about 40 cm of electrical wire, a pair of scissors, some Blu-tack, a pencil, a pencil sharpener and a radio. Cut the wire into two 20 cm lengths and bare the ends. Connect one end of the first piece of wire to a battery terminal. Then connect one end of the other length of wire to the other terminal. Sharpen both ends of the pencil. Secure the wire from the negative terminal to one end of the pencil with the Blu-tack. Roll the bare end of the wire from the positive terminal into a ball. Turn the radio on and then tap the bare end of the pencil on to the ball of wire. Keep tuning the radio on the AM band until you can hear the broadcast of the tapping.

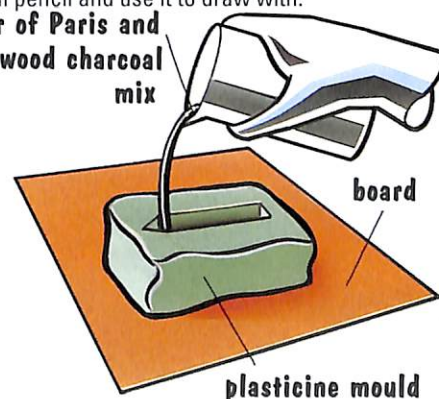


A CHARCOAL PENCIL



You need half a cup of wood charcoal (or soot), half a cup of plaster of Paris, a mixing bowl and spoon, a jam jar of water and some plasticine. Form the plasticine into a pencil-shaped mould as shown. Mix the plaster of Paris and soot together in the bowl, then pour in some of the water from the jam jar. Stir the mixture together, adding water as needed, until you have a smooth, thick paste. Finally, pour the mixture into the mould. After about an hour the mixture will have set. You will be able to take out the charcoal pencil and use it to draw with.

plaster of Paris and
wood charcoal
mix



PROJECT INFORMATION



Each **QUEST** project and model has its own difficulty rating: 1 very simple, 2 simple, 3 intermediate, 4 advanced, 5 complicated.

WARNING!

Every care has been taken to ensure projects are as safe as possible. However, parents should supervise all projects. The publisher can accept no liability for injury.

DATAQUEST

ENERGY: TOP TEN ENERGY PRODUCERS

Country	Million metric tonnes of coal equivalent
CIS	2,000
USA	1,900
China	700
Saudi Arabia	400
UK	350
Canada	250
Mexico	220
Iran	200
Poland	190
Venezuela	180

ENERGY: TOP TEN ENERGY CONSUMERS

Country	Million metric tonnes of coal equivalent
USA	1,900
CIS	1,600
China	625
UK	250
Canada	225
Germany	150
India	150
France	50
Japan	40
Italy	20

SURVIVAL: THE WORLD'S MOST POPULOUS CITIES

Population	City	Country	Date
50,000	Warka	Iraq	3000 BC
250,000	Tell Muqayyar	Iraq	2200 BC
350,000	al-Hillah	Iraq	600 BC
500,000	Pataliputra Bihar	India	400–185 BC
600,000	Seleukia (near Baghdad)	Iraq	300 BC – 165 AD
1,100,000	Rome (founded c. 510 BC)	Italy	133 BC
1,500,000	Angkor	Cambodia	900 BC
1.0 – 1.5 million	Hangzhou	China	1279
707,000	Beijing	China	1578
1,117,290	London	United Kingdom	1801
8,615,050	London (peak)	United Kingdom	1939
29,272,000	Tokyo	Japan	1993

ENVIRONMENT: TEMPERATURE EXTREMES

Date	Temperature	Place
HIGH		
27 Aug 1884	53°C	Ouargla, Algeria
17 Aug 1885	54.4°C	Amos, California, USA
17 Aug 1885	54.4°C	Mammoth Tank, California, USA
10 July 1913	56.7°C	Death Valley, California, USA
13 Sept 1922	58°C	Al'Aziziyah, Libya
LOW		
5 & 7 Feb 1892	-68°C	Verkhoyansk, Siberia, USSR
6 Feb 1933	-68°C	Oymyakon, Siberia, USSR
11 May 1957	-73.5°C	South Pole, Antarctica
17 Sept 1957	-74.5°C	South Pole, Antarctica
2 May 1958	-78.3°C	Sovietskaya, Antarctica
15 Jun 1958	-80.7°C	Vostok, Antarctica
19 Jun 1958	-81.2°C	Sovietskaya, Antarctica
25 Jun 1958	-83°C	Sovietskaya, Antarctica
7-8 Aug 1958	-85.7°C	Vostok, Antarctica
9 Aug 1958	-86.7°C	Sovietskaya, Antarctica
25 Aug 1958	-87.4°C	Vostok, Antarctica
24 Aug 1960	-88.3°C	Vostok, Antarctica
21 Jul 1983	-89.2°C	Vostok, Antarctica

CHEATING



Britain's Nigel Mansell just clipped a kerb at 144 km/h in practice, spun into a crash barrier, smashed his Williams racing car and put himself out of the 1987 Japanese Grand Prix.

Colorsport/Sipa

A trivial accident by motor racing standards, it was enough to put Nigel Mansell out of the race. He was unable to climb out of the cockpit and was rushed to hospital with back injuries.



QUEST



GO DEATH

SURVIVING THE GRAND PRIX PILE UP



The tiniest mistake or a trivial mechanical failure can cause a major pile-up. Stewards rush to the scene with fire extinguishers, and crash survivors leap from fuel-laden cars.

THE PERILS OF FORMULA 1 RACING

Formula 1 racing is a dangerous game. At speeds over 300 km/h drivers are constantly dicing with death.

Even the slightest error in judgement can cause a major pile-up. A minor mechanical failure or a blown tyre can result in serious injury or even death. Nelson Piquet was hoping to finish second or third in the Austrian Grand Prix when in 1990 a puncture sent his car spinning into Michele Alboreto's Ferrari. But even this dangerous, high-speed collision could not stop the determined Brazilian. With a speedy wheel-change, he still managed to come fifth.

Britain's Nigel Mansell won the race – but not without incident. His Williams clipped wheels with Ivan Capelli's March and almost left the track. After taking the chequered flag, Mansell

complained that Capelli had driven badly and demanded that he be reprimanded.

These days, however, high-speed Formula One crashes are rarely fatal. The drivers are surrounded by cages that are virtually uncrushable. The rest of the car may buckle and twist, but the cockpit and the leg space around the driver remain safe.

The other major danger used to be fire. The fuel used in Formula 1 racing is highly inflammable. Tanks were built into every available space – including the car's single seat, which is moulded around the driver. When the fuel tanks burst, the fuel goes up in a sheet of flame. But, these days, fire-proof suits, gloves and masks safeguard the driver in even the most ferocious conflagration.